

Many cases of distortion of the species of *Laminaria* and of other species of the *Laminariaceæ*, are to be met with in any extensive collecting. Spiral forms both of blade and of stipe are often found, as well as the trilaminate forms, both of the digitate and of the simple species. Bifurcate forms are rarer, but do occur in the digitate species. They arise from the blade being split deeper than usual, that is even down through the transition place into the stipe, while the plant is still young and the tissues are still capable of a considerable amount of growth. These forms have even received varietal names from the earlier algologists.

(*To be continued.*)

#### NOTES ON THE DISTRIBUTION OF SOME OF THE RARER PLANTS OF CENTRAL MASSACHUSETTS.

ROLAND M. HARPER.

DURING two seasons of botanizing in Worcester County and adjacent territory, I have met with quite a number of plants which, while already known to occur in the counties or states in which I collected them, are perhaps so local in their distribution that new stations for them may be of more or less interest to any one who makes a study of the geographical and altitudinal distribution of the flora of New England.

Most of these plants have hitherto been known in Worcester County from only one town, or have been reported by only one observer; and an examination of the more recent local floras of adjacent states and counties has shown me that they are, for the most part, little known in those regions also. I have therefore thought it worth while to place on record some of my observations on a few such plants for comparison with those of other botanists.

The lists of stations here given may be regarded rather as tending to fill lacunæ in our present knowledge of the distribution of the plants under consideration, than as furnishing actual extensions of range. All the plants mentioned have been collected in 1899 unless otherwise specified.

*Botrychium matricariæfolium*, Braun. Rich damp woods, Southbridge, August 13, 1898 (altitude 520 feet); only two or three specimens seen. This seems to be the southernmost known station for



this species in New England, as it has not been reported from Rhode Island or Connecticut.

*Lycopodium inundatum*, L. Sandy shore of Lead Mine Pond, Sturbridge, July 31, 1898; also in a wet sandy place in another part of the same town, August 28, 1898.

*Isoetes echinospora*, var. *Braunii*, Engelm. During last July and August I found this interesting and comparatively little-known plant in Worcester County in a number of stations and under a variety of conditions. I have seen it in muddy, sandy, and rocky bottoms of brooks and rivers, in Southbridge, Sturbridge, Dudley, and Brookfield, at altitudes ranging from 395 feet in the Quinebaug River in Dudley to 640 feet in Cohasse Brook in Southbridge. Some of the specimens observed grew above low-water mark, and were left high and dry by the natural subsidence of the water in dry weather. This plant has been previously reported in Worcester County only from Lake Quinsigamond, by Dr. Stone.

*Sagittaria graminea*, Mx. In muddy places or under water, Dudley, Southbridge, and Brookfield. I found the flowering, leaf-bearing form near the Quinebaug River in Dudley, July 30, but elsewhere I have seen only the submersed sterile form with phyllodia. On September 4, in company with Dr. Stone, I found this form on the sandy bottom of Quaboag Lake, about three feet below the surface. How the plant perpetuates itself in such a situation is an interesting question.

*Panicum xanthophysum*, Gray. Dry open woods, etc., Southbridge. This plant is also unknown in Rhode Island and Connecticut, and has been reported in Massachusetts only from Princeton and Framingham.

*Oryzopsis asperifolia*, Mx. In woods, Oxford, Southbridge, Sturbridge, and Brookfield. Previously known in Worcester County only on Mount Wachusett.

*Oryzopsis melanocarpa*, Muhl. Rocky woods, Sturbridge, July 23 (altitude 920 feet). Previously reported from Princeton.

*Muhlenbergia Willdenovii*, Trin. Rich woods, Dudley, August 27.

*Muhlenbergia diffusa*, Schreber. Dry fields, Southbridge, August 31.

*Glyceria acutiflora*, Torr. Muddy ditch in meadow, Southbridge, June 23 (altitude 660 feet).



*Scirpus sylvaticus*, L. Wet meadows, Southbridge, etc., not rare.

*Eriophorum alpinum*, L. Many fine specimens of this interesting plant, some of them 16 inches tall, were found in a sphagnous meadow in Dudley, June 11, at an altitude of only 675 feet, in latitude  $42^{\circ} 3' 45''$ . This seems to be the southernmost known station for this species in North America, with the exception of one in Connecticut (Willington), which is about ten miles farther south.

*Eriophorum vaginatum*, L. Cedar swamp, Charlton, May 20 (altitude 640 feet); also near the summit of Mount Monadnock, N. H., July 3 (altitude about 3150 feet).

*Eriophorum gracile*, Koch (the type). Cool, wet meadows, Southbridge, Charlton, etc. In flower May 10, and fruiting the same month.

*Carex fusca*, All. Wet meadow near Quinebaug River, Dudley, June 11; Quaboag River marshes, Brookfield, June 18. The Brookfield specimens (which are referred by Mr. Fernald to this species) mature apparently about two weeks later than the others, and have the terminal spike entirely staminate.

*Carex arctata*, Boott. Rich woods on east side of Hatchet Hill, Southbridge, May 21; rare. This station is about a quarter of a mile from Connecticut, in which state (as well as in Rhode Island) the plant has not been reported.

*Juncus Canadensis*, var. *coarctatus*, Engelm. Wet woods, Southbridge, July 29 (altitude 600 feet); a very small form, with filiform stems (3 to 4 inches tall), and 1-4 few-flowered heads. This variety has been previously reported in the county only from Princeton, in which town I have collected it also.

*Luzula vernalis*, DC. Rich moist woods, Southbridge (altitude about 500 feet), rare. Previously reported from Mount Wachusett, where I have also found it, growing with *Panicum xanthophysum* and *Oryzopsis asperifolia*, at an altitude of about 1975 feet.

*Goodyera repens*, var. *ophioides*, Fernald. (*G. repens* of the Manual.) Rich coniferous woods, Southbridge (altitude 660 feet).

*Corallorhiza innata*, R. Br. Cool wet woods, Southbridge, May 14 and 20. Only two stations, with one or two plants at each (altitudes 640 and 500 feet).

*Polygonella articulata*, Meisn. Dry sandy soil along railroads, Dudley and Douglas, Mass., Thompson, Conn., and Burrillville, R. I., ascending to 590 feet in Douglas.



*Liriodendron Tulipifera*, L. On August 6 I found numerous young trees of this species in Burrillville, R. I., along the east side of Wallum Pond, in woods of apparently about five years' growth; and a little further search revealed a few similar specimens just across the line in Douglas, Mass., which is probably very near the northeastern limit of the species.

*Ranunculus Pennsylvanicus*, L.f. Wet clayey soil, Southbridge, July 29. Credited only to Barre in the Worcester County flora.

*Adlumia cirrhosa*, Raf. Shady, rocky woods, Southbridge, June 7.

*Dentaria diphylla*, L. Northeast side of Shumway Hill, Sturbridge, May 28.

*Alyssum calycinum*, L. Several specimens in Oak Ridge Cemetery, Southbridge, June 6; only in ground which had been recently turned up and raked over; accompanied by a few specimens of its relative, *Camelina sativa*, Crantz.

*Dalibarda repens*, L. "Gulf Woods," Southbridge (elevation 500 feet); quite abundant in certain spots.

*Potentilla palustris*, L. Marshes and muddy banks of the Quaboag River, Brookfield and West Brookfield, May 30 (altitude 610 feet); also near Quinebaug River, Sturbridge, July 23 (altitude 575 feet).

*Poterium Canadense*, L. Wet meadows, near Quaboag Lake and its tributaries, Brookfield and North Brookfield, June 18. No definite station is assigned to this plant in either edition of the Worcester County flora, but it seems to be very local in its distribution throughout New England. I have not seen it elsewhere in the county than in the valley of the Quaboag River.

*Acer spicatum*, Lam. Several fine specimens on the steep southwest bank of the Quinebaug River in Sturbridge (altitude 590 feet). Previously reported from Princeton, where it is more abundant. Both in Sturbridge and on Mount Wachusett it is accompanied by *Rubus odoratus*, L.

*Viola rotundifolia*, L. Damp shady woods, in two or three localities in Southbridge, at altitudes ranging from 540 to 600 feet.

*Aralia quinquefolia*, D. & P. Rich woods, Southbridge; about twenty specimens at one station.

*Moneses grandiflora*, Salisb. A few specimens found June 26, 1898, in rich woods near Hatchet Hill, Southbridge (altitude 800 feet).

*Rhododendron viscosum*, var. *glaucum*, Gray. Borders of cedar-



swamp, Charlton (altitude 640 feet); with the type, but easily distinguished by its pale leaves, contrasting with the bright green ones of the type. I have also noticed a marked difference between the variety and the type in the odor of the flowers. This variety seems to be known in New England from a very limited number of stations.

*Kalmia glauca*, Ait. Cedar-swamp, Charlton (altitude 640 feet).

*Utricularia purpurea*, Walt. Walker Pond (Lake Tantasque), Sturbridge, August 13 (altitude 595 feet).

*Lonicera cærulea*, L. Wet meadows in the southern parts of Southbridge and Sturbridge (altitudes 600 to 840 feet).

COLUMBIA UNIVERSITY.

## ON THE FLORA OF CHESTERVILLE, MAINE.

C. H. KNOWLTON.

CHESTERVILLE is one of the southern towns of Franklin County, Maine. It affords a great variety of conditions for plant-life and is therefore a very interesting field of study. The northern part of the town has the ordinary hard-wood growth of the region. Near the center is a large sand-plain, known as Chesterville Plains. In the southern part is a "horseback" four miles in length, called Chesterville Ridge. This has a uniform elevation, and is very nearly straight. On each side of it are bogs and ponds.

It was my privilege, in company with Mr. H. W. Jewell of Farmington, Me., to explore partially this region, Aug. 15-17, 1899. We found the following plants, not previously reported from Franklin County, and all of them, with the exception of *Cladium*, from near the northern limit of their ranges.

*Rhus venenata*, DC. Margin of Horseshoe pond. A very rare plant north of York County.

*Decodon verticillatus*, Ell. Growing on a bog near the margin of Round pond.

*Aster nemoralis*, Ait. Bog near Locke's pond, N. Chesterville.

*Utricularia resupinata*, B. D. Greene. Very abundant on wet sandy shore, Norcross pond.

*Fimbristylis autumnalis*, R. & S. Same station, not abundant.

*Cladium mariscoides*, Torr. Same station.